

IN THE CLAIMS:

Please AMEND claim 31, as follows:

1-14. (Cancelled)

15. (Previously Presented) An image fusing device having a fixedly positioned heater, a film adapted to move in contact with the heater, and a pressure member cooperating with the heater, with the film interposed therebetween, to form a nip portion, wherein a transfer material carrying an image is passed between the film and the pressure member in the nip portion to heat the image on the transfer material with heat radiated from the heater through the film, the image fusing device comprising:

temperature detection means for detecting a temperature of the heater;

current detection means for detecting a current flowing in the heater; and

control means for controlling electricity to the heater so that a current flowing in the heater is equal to a preset target current value and for correcting the preset target current value when the temperature detected by the temperature detection means as the transfer material passes through the nip portion deviates from a preset temperature range.

16. (Original) An image fusing device according to claim 15, wherein the film is a heating roller formed of an endless film, the pressure member is a pressing roller and the heater is in contact with an inner circumferential surface of the heating roller formed of the endless film.

17. (Original) An image fusing device according to claim 15, wherein the temperature detection means is arranged on a side of the heater opposite the side of the heater that is in contact with the film.

18. (Original) An image fusing device according to claim 15, wherein the image carried on the transfer material is an unfixed toner image and the unfixed toner image is permanently fixed through heating.

19. (Previously Presented) An image forming apparatus comprising:  
image forming means for forming an unfixed toner image on a transfer material; and

fusing means for permanently fixing the unfixed toner image carried on the transfer material;

wherein the fusing means is the fusing device of claim 15.

20. (Previously Presented) An image fusing device having a fixedly positioned heater, a film adapted to move in contact with the heater, and a pressure member cooperating with the heater, with the film interposed therebetween, to form a nip portion, wherein a transfer material carrying an image is passed between the film and the pressure member in the nip portion to heat the image on the transfer material with heat radiated from the heater through the film, the image fusing device comprising:

temperature detection means for detecting a temperature of the heater;  
current detection means for detecting a current flowing in the heater; and  
control means for controlling electricity to the heater so that a temperature of the heater is equal to a preset target temperature and for correcting the preset target temperature when the current detected by the current detection means as the transfer material passes through the nip portion deviates from a preset range.

21. (Original) An image fusing device according to claim 20, wherein the film is a heating roller formed of an endless film, the pressure member is a pressing roller and the heater is in contact with an inner circumferential surface of the heating roller formed of the endless film.

22. (Original) An image fusing device according to claim 20, wherein the temperature detection means is arranged on a side of the heater opposite the side of the heater that is in contact with the film.

23. (Original) An image fusing device according to claim 20, wherein the image carried on the transfer material is an unfixed toner image and the unfixed toner image is permanently fixed through heating.

24. (Previously Presented) An image forming apparatus comprising:

image forming means for forming an unfixed toner image on a transfer material; and

fusing means for permanently fixing the unfixed toner image carried on the transfer material;

wherein the fusing means is the fusing device of claim 20.

25. (Cancelled)

26. (Previously Presented) An image fusing device according to claim 15, wherein the current detection unit comprises:

a current-voltage conversion unit for converting an input current to the heater into a voltage;

a half-wave rectification unit for half-wave rectifying the voltage obtained by the current-voltage conversion unit;

an integral unit for integrating a half-wave rectified output produced by the half-wave rectification unit;

a differential amplification unit for amplifying a difference between an integrated result produced by the integral unit and the half-wave rectified output;

a maximum value holding unit for holding a maximum output of the differential amplification unit as a maximum value of the input current;

a first pulse signal output unit for outputting a pulse signal when an input supply voltage to the heater falls below a predetermined threshold; and

a discharge unit for discharging a capacitor making up the integral unit and a capacitor making up the maximum value holding unit in response to the pulse signal from the first pulse signal output unit.

27. (Previously Presented) An image fusing device according to claim 26, wherein the maximum value holding unit outputs a maximum value held therein at the rising edge of the pulse signal from the first pulse signal output unit.

28. (Previously Presented) An image fusing device according to claim 26, wherein the first pulse signal output unit is replaced with a second pulse signal output unit that outputs a pulse signal a predetermined time after the input supply voltage to the heater falls below a predetermined threshold.

29. (Previously Presented) An image fusing device according to claim 28, wherein the maximum value holding unit outputs a maximum value held therein at the rising edge of the pulse signal from the second pulse signal output unit.

30. (Previously Presented) An image fusing device according to claim 28, wherein the discharge unit discharges a capacitor making up the integral unit and a capacitor making up the maximum value holding unit in response to the pulse signal from the second pulse signal output unit.

31. (Currently Amended) An image fusing device according to claim 20 ~~15~~, wherein the current detection unit comprises:

a current-voltage conversion unit for converting an input current to the heater into a voltage;

a half-wave rectification unit for half-wave rectifying the voltage obtained by the current-voltage conversion unit;

an integral unit for integrating a half-wave rectified output produced by the half-wave rectification unit;

a differential amplification unit for amplifying a difference between an integrated result produced by the integral unit and the half-wave rectified output;

a maximum value holding unit for holding a maximum output of the differential amplification unit as a maximum value of the input current;

a first pulse signal output unit for outputting a pulse signal when an input supply voltage to the heater falls below a predetermined threshold; and

a discharge unit for discharging a capacitor making up the integral unit and a capacitor making up the maximum value holding unit in response to the pulse signal from the first pulse signal output unit.

32. (Previously Presented) An image fusing device according to claim 31, wherein the maximum value holding unit outputs a maximum value held therein at the rising edge of the pulse signal from the first pulse signal output unit.

33. (Previously Presented) An image fusing device according to claim 31, wherein the first pulse signal output unit is replaced with a second pulse signal output unit that outputs a pulse signal a predetermined time after the input supply voltage to the heater falls below a predetermined threshold.

34. (Previously Presented) An image fusing device according to claim 33, wherein the maximum value holding unit outputs a maximum value held therein at the rising edge of the pulse signal from the second pulse signal output unit.

35. (Previously Presented) An image fusing device according to claim 33, wherein the discharge unit discharges a capacitor making up the integral unit and a capacitor making up the maximum value holding unit in response to the pulse signal from the second pulse signal output unit.